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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,396	04/15/2004	Alan S. Edelstein	ARL 03-10	6421
37064	7590	06/15/2006	EXAMINER	
OFFICE OF COMMAND COUNSEL, U.S. ARMY MATERIEL COMMAND ATTN: AMCCC-B-IP 9301 CHAPEK ROAD FORT BELVOIR, VA 22060-5527			BERNATZ, KEVIN M	
		ART UNIT	PAPER NUMBER	
		1773		
DATE MAILED: 06/15/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/824,396	EDELSTEIN ET AL.	
	<b>Examiner</b> Kevin M. Bernatz	<b>Art Unit</b> 1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 14-24 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1-13 is/are rejected.
- 7) Claim(s) \_\_\_\_ is/are objected to.
- 8) Claim(s) 1-24 are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 15 April 2004 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/15/04.

- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_.

## DETAILED ACTION

### ***Election/Restrictions***

1. Applicant's election without traverse of Group I, claims 1 - 13 in the reply filed on March 17, 2006 is acknowledged. Claims 14 – 24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 – 4 and 6 – 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Beli et al. (U.S. Patent No. 6,527,193 B1) – **and –**

4. Claims 1 – 4 and 6 – 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Beli et al. (WO 99/05636). See US '193 B1, which is the US equivalent to WO '636.

Regarding claim 1, Beli et al. disclose a magnetic storage device comprising a substrate, a magnetic material adjacent to said substrate, and regions of variable magnetic permeability in said magnetic material (*col. 1, line 1 bridging col. 3, line 27 and col. 17, line 10 bridging col. 18, line 30 – specifically, either forming regions on the*

*surface layer of an automobile part, or forming regions in iron-boron metglass located adjacent to a substrate made of paper, etc).*

Regarding claim 2, Beli et al. disclose additional coating layers being applicable to the invention (*col. 2, lines 5 – 8*).

Regarding claims 3, 4 and 10, Beli et al. disclose materials meeting applicants' claimed limitations (*col. 17, line 10 bridging col. 18, line 30 – iron magnetic nanoparticles embedded in a boron-silicon metglass*).

Regarding claims 6, 7, 9 and 11, Beli et al. disclose crystallizing as a means for achieving the difference in structure or internal stress, which is used to produce regions having different magnetic permeability (*col. 1, line 1 bridging col. 3, line 27 and col. 17, line 10 bridging col. 18, line 30*). The Examiner notes that there is no functional difference whether one of ordinary skill produces a structure possessing magnetic permeable amorphous regions having a higher or lower permeability than nearby magnetic permeable crystallized regions. In both cases, the data storage is due to the difference in permeability and whether the amorphous phase or crystalline phase has a higher permeability versus the other is simply a matter of which material is used. Beli et al. disclose the general concept of the invention and encompasses embodiments meeting applicants' claimed limitations.

Furthermore, the Examiner notes that there is sound basis that the embodiments explicitly taught in *col. 17, line 10 bridging col. 18, line 30*, would inherently meet applicants' claimed limitations since these are substantially identical to applicants' preferred embodiments (i.e. ferromagnetic nanoparticles embedded in a metglass,

wherein the ferromagnetic particles are subject to laser irradiation to change the permeability of selected regions).

Regarding claims 8, 12 and 13, Beli et al. disclose structures meeting applicants' claimed limitations (*col. 17, line 10 bridging col. 18, line 30 – the glass matrix surrounding the ferromagnetic particles of the metglass*).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beli et al. (either reference) as applied above.

Beli et al. is relied upon as described above.

Beli et al. fail to disclose a thickness of the magnetic layer, though the Examiner notes that Beli et al. teach embodiments to be used in dollar bills (*col. 17, line 10 bridging col. 18, line 30*).

The Examiner notes that the thickness of the magnetic layer is a known cause effective variable in terms of cost (thicker = more material = more expensive), stiffness (thicker = stiffer) and ease of concealment (thicker = harder to conceal). Therefore, the Examiner deems that it would have been obvious to one having ordinary skill in the art to utilize a thickness of the magnetic layer meeting applicants' claimed thickness range

by optimizing the results effective variable through routine experimentation. *In re Boesch*, 205 USPQ 215 (CCPA 1980); *In re Geisler*, 116 F. 3d 1465, 43 USPQ2d 1362, 1365 (Fed. Cir. 1997); *In re Aller*, 220 F.2d, 454, 456, 105 USPQ 233, 235 (CCPA 1955). The Examiner notes that this is especially true in the case of making data storage devices to conceal inside dollar bills, which would require nanometer scale thickness values to insure their invisibility to physical inspection.

### ***Conclusion***

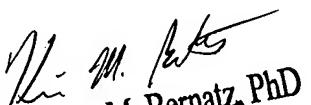
7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Goto et al. (U.S. Patent No. 5,293,031) is 102(b) art on at least some of the claims (*Abstract + entire disclosure*). However, the Examiner deems that any amendment and/or argument to overcome Beli et al. will likely overcome Goto et al., so no rejections predicated on Goto et al. have been made.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Bernatz whose telephone number is (571) 272-1505. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KMB  
June 10, 2006

  
Kevin M. Bernatz, PhD  
Primary Examiner